UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,877	09/29/2003	Michael A. Rothman	42P17241	6774

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EXAMINER
VO, TED T

ART UNIT	PAPER NUMBER
2191	.

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 September 2006*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the amendment filed on 09/11/2006.

Claims 1-26 are pending in the application.

Specification

2.   This specification remains objected to because the amendment does not comply with 1.57

addressed by the prior action, and reproduced as follows:

The paragraph given in p. 1: 5-8 requires having a statement in the manner in accordance to CFR

§ 1.57, "Incorporation by reference".

Response to Arguments

3.   Applicant's arguments filed on 09/11/06 have been fully considered but they are not persuasive.

Claims remain broad. The amendment necessitated by new ground of rejections.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for

the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or
in public use or on sale in this country, more than one year prior to the date of application for
patent in the United States.

5.   Claims 1-6, 8-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Rubini et al., "Linux

Device Drivers", 2nd Edition, 6/2001.

Given the broadest reasonable interpretation of followed claims in light of the specification.

As per Claim 1: Rubini discloses, *A method, comprising:*

copying into a user space(1) *of a computer system, an optimized library* (2) (in Chapter 3: (1) see p. 79:

using "copy_to_user"; (2) See p. 67, refer "user-space programs" such as "FILE ") *including a hardware*

optimized function (see page 79, e.g., "functions", "diver functions", in paragraph started with "Although

these functions...") *for the computer system;* (see p. 85, second bold dot, "device driver": *hardware*

optimized function, and "user-space programs": *an optimized library)*(In chapter 2: p. 45, see "Doing It in

user space", "user programs": *an optimized library* , "user-space drivers" : *a hardware optimized function)*

(In chapter 3, see p. 80, Figure 3-2).

and importing into the user space an entry point for the hardware optimized function (In chapter 3, see

page 79, in three consecutive paragraphs, started with 'Although these functions...': see "Writing

Reentrance Code", user space pointers". In chapter 5: started at p 173, see sec. "Access to User Space

in Linux 2.0", functions put_user and get_user: all have means, *importing into the user space an entry*

point, the entry point to be available to an application executing in the user space. (When executed, the

flow will follow the entry point/pointers to the device driver/use-space device, etc.) (In chapter 3, see p.

80, Figure 3-2).

As per Claim 2: Rubini discloses, *The method of claim 1, further comprising initializing a user library*

bound to the application, the user library to initiate the copying of the optimized library., In Chapter 2, at p.

29, see sec, Initialization and Shutdown, start at p. 34 see Explicit Initialization and cleanup functions. In

chapter 16, start at p. 511, "execute user-space init process").

As per Claim 3: Rubini discloses, *The method of claim 1, further comprising making a call to the hardware*

optimized function by the application to initiate execution of the hardware optimized function. Explaining:

when executing a user program it executes the device driver. In chapter 3, start at p. 56, paragraph,

"When *devfs...".*

<u>As per Claim 4</u>: Rubini discloses, *The method of claim 1 wherein importing the entry point comprises importing a memory address of the hardware optimized function to a data structure associated with the application.* In chapter 16, See p. 515, second paragraph).

<u>As per Claim 5</u>: Rubini et al discloses, *The method of claim 1, further comprising allocating a buffer in user space to receive the optimized library when copied into the user space.* (In chapter 3: p. 57-58. See p. 80, Figure 3-2).

<u>As per Claim 6</u>: Rubini et al discloses, *The method of claim 1, further comprising validating the optimized library before copying the optimized library into the user space* (In chapter 5, p. 136, get_user and put_user do checking).

<u>As per Claim 8</u>: Rubini discloses, *The method of claim 1, further comprising advertising the optimized library by firmware of the computer system during operating system runtime.* In chapter 16, see p 508, line 1, 'System firmware').

<u>As per Claim 9</u>: Rubini discloses, *The method of claim 1 wherein the hardware optimized function includes code to optimize at least one operation of at least one hardware device of the computer system.* Refer to "user-space devices" in the user programs.

<u>As per Claim 10</u>: Rubini discloses, *The method of claim 9 wherein the at least one hardware device includes a Central Processing Unit (CPU) of the computer system.* Any particular user-space device in the user program has this means.

<u>As per Claim 11</u>: The functionality of this claim is corresponding to limitation recited in the method of Claim 1. See rationale discussed in Claim 1 above.

<u>As per Claim 12</u>: Rubini discloses, *The article of manufacture of claim 11 wherein execution of the plurality of instructions further perform operations comprising returning a failure indicator by the user library to the application if the initialization of the user library failed* (In chapter 3, p.57: line 1).

<u>As per claim 13</u>: see in chapter 3, p. 92, paragraph, The way the sample code...."translate" from the old API to the new. p. 79: using "copy_to_user".

As per Claim 14: Rubini discloses, *The article of manufacture of claim 11 wherein execution of the plurality of instructions further perform operations comprising allocating a buffer in user space to receive the optimized library when copied into the user space* (See rationale addressed in the rejection of Claim 5).

As per Claim 15: Rubini discloses, *The article of manufacture of claim 11 wherein the at least one hardware device includes a Central Processing Unit (CPU) of the computer system* (See rationale addressed in the rejection of Claim 10).

As per Claim 16: Rubini discloses, *The article of manufacture of claim 11 wherein execution of the plurality of instructions further perform operations comprising generating the data structure for the application, the data structure to include a memory address corresponding to the hardware optimized function.*

(See rationale addressed in the rejection of Claim 4).

As per Claim 17: Rubini discloses, *The article of manufacture of claim 16 wherein exporting the entry point of the optimized function comprises entering a memory address of the optimized function in the data structure.* (See rationale addressed in the rejection of Claim 4).

As per Claim 18: Rubini discloses, *The article of manufacture of claim 11 wherein execution of the plurality of instructions further perform operations comprising exporting an entry point of a non-optimized function to the data structure in place of the entry point of the hardware optimized function if an error occurs while exporting the entry point of the hardware optimized function.* (See Rationale in Claim 1).

As per Claim 19: Rubini discloses, *The article of manufacture of claim 11 wherein execution of the plurality of instructions further perform operations comprising generating a second data structure to register a function of the user library for use by the optimized library.* (In chapter 3, see p. 95 register_chrdev).

As per Claim 20: See rationale discussed in Claim 1 above.

As per Claim 21: See rationale discussed in Claim 8 above.

As per Claim 22: Regarding, *The computer system of claim 20 wherein the optimized library is stored on a hard disk accessible to the computer system* (See Fig. 3, where the RAM can be compatible to a hard disk).

As per Claim 23: See rationale discussed in Claim 6 above.

As per Claim 24: See rationale discussed in Claim 8 above.

As per Claim 25: See rationale discussed in Claim 10 above.

As per Claim 26: Regarding, *The computer system of claim 20 wherein exporting the plurality of entry points comprises providing a plurality memory addresses corresponding to the plurality of optimized functions to a data structure associated with the application.* Claim is unclear, "*wherein exporting*" is not seen in the higher tree of this claim. Same rejection as it is applied to Claim 20.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rubini et al., "Linux Device Drivers", 2nd Edition,

As per claim 7: Rubini does not disclose the optimized function *"optimized library"* is validated by

verifying a signature of the optimized library.

Official notice is taken that using signature to verify a signed document is common in the art for security

purpose. It has been used as a standard for data security subject mater. Therefore, it would have been

obvious to a person of ordinary skill in the art at to use signature for validating a signed file since it is

standard in data security known as cryptography.

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office

action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of

the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the

mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of

this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened

statutory period, then the shortened statutory period will expire on the date the advisory action is mailed,

and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS

from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should

be directed to Ted T. Vo whose telephone number is (571) 272-3706. The examiner can normally be

reached on 8:00AM to 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Wei Y. Zhen can be reached on (571) 272-3708.

The facsimile number for the organization where this application or proceeding is assigned is the

Central Facsimile number **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTV
November 22, 2006

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PRIMARY EXAMINER
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